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CENTRAL INTELLIGENCE AGENCY

REPORT

INFORMATION REPORT

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50X1-HUM

COUNTRY USSR

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SUBJECT Supposed Soviet Formula for Secret Ink

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1. It has been reported that the Soviet Intelligence Service utilized the following formula for a covert ink in their transmission of classified information on newspapers and/or letters:

Three times substitute Pyrole, this reacts exclusively on an equally rare substance; mainly, Triphenylaminobenzaldehyde. When thus treated by the latter substance, the Pyrole becomes legible in a reddish color.

2. In order to clarify the above, the following technical description was obtained:

PYROLE C_4H_5N

Pyrole is a heterocyclic combination containing 5 atoms. There are several substances to be found in nature which contain the pyrole nucleus, among them haematin (the red coloring matter of the blood), chlorophyll and several alkaloids, especially nicotine.

Pyrole can be found in Dippels oil, especially when it is obtained from degreased bones. (Dippels oil is obtained through rectification of raw animal oil, which is produced by dry distillation of bones that have not been degreased.)

The fraction of Dippels oil which boils between $120^{\circ} - 131^{\circ}C$ is used to produce pyrole. Through treatment with diluted sulfuric acid this fraction is released from pyridine bases, through boiling with a soda solution from nitriles; then it is dried and combined with kalium metal. Thus pyrolekalium is formed C_4H_4NK , which can be cleansed through washing with ether and which returns to pyrole through the addition of water.

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Pyrole is a colorless liquid of specific gravity 0,948 at 20°; it is insoluble in water and boils at 131°C. Its vapor produces a cherry-red coloration on pine wood moistened with hydrochloric acid, due to the formation of pyrolered. This reaction is a characteristic of pyrole derivatives.

Pyrole can also be obtained synthetically through treatment of the "Butandial" with ammonia.

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